

NO DCL  
2.8 V.9 (6)

University of Alberta Library



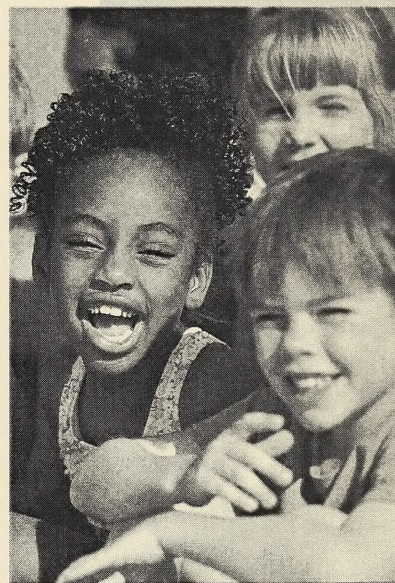
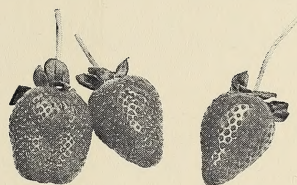
0 1620 3503136 6

Mathematics

## Module 8

# What Does the Data Show?

Home Instructor's Guide: Day 10–18  
and  
Assignment Booklet 8B



Learning  
Technologies  
Branch

**Alberta**  
LEARNING





Grade Two Mathematics  
Module 8: What Does the Data Show?  
Home Instructor's Guide: Days 10–18 and Assignment Booklet 8B  
Learning Technologies Branch  
ISBN 0-7741-2050-9

Cover photo: left: PhotoDisc, Inc.  
right: EyeWire, Inc.

This document is intended for	
Students	✓
Teachers	✓
Administrators	
Home Instructors	✓
General Public	
Other	



You may find the following Internet sites useful:

- Alberta Learning, <http://www.learning.gov.ab.ca>
- Learning Technologies Branch, <http://www.learning.gov.ab.ca/lrb>
- Learning Resources Centre, <http://www.lrc.learning.gov.ab.ca>

The use of the Internet is optional. Exploring the electronic information superhighway can be educational and entertaining. However, be aware that these computer networks are not censored. Students may unintentionally or purposely find articles on the Internet that may be offensive or inappropriate. As well, the sources of information are not always cited and the content may not be accurate. Therefore, students may wish to confirm facts with a second source.

#### ALL RIGHTS RESERVED

Copyright © 2001, the Crown in Right of Alberta, as represented by the Minister of Learning, Alberta Learning, 11160 Jasper Avenue, Edmonton, Alberta T5K 0L2. All rights reserved. Additional copies may be obtained from the Learning Resources Centre.

No part of this courseware may be reproduced in any form, including photocopying (unless otherwise indicated), without the written permission of Alberta Learning.

Every effort has been made both to provide proper acknowledgement of the original source and to comply with copyright law. If cases are identified where this effort has been unsuccessful, please notify Alberta Learning so that appropriate corrective action can be taken.

**IT IS STRICTLY PROHIBITED TO COPY ANY PART OF THESE MATERIALS UNDER THE TERMS OF A LICENCE FROM A COLLECTIVE OR A LICENSING BODY.**

## Module 8: What Does the Data Show?

### Daily Summary

#### Day 10

The student learns to discuss data and draw conclusions from it.

#### Day 10: Lesson 1

Discuss how graphs can give a lot of information about a subject. Go over each question with the student, and discuss the type of information you can learn from a graph.

#### Answers

1.
  - a. Sheila wanted to know how many stickers her friends had.
  - b. Maria
  - c. Brent
  - d. 8, by subtracting the stickers Ivan has from the ones Anna has:  $11 - 3 = 8$
  - e. Cornel, by subtracting the stickers Sheila has from the ones Cornel has:  $7 - 6 = 1$
  - f. 6
  - g. 3
  - h. 3
  - i. Sheila's graph may be the same or it may be different. Any of the children may buy more stickers or give some away. The data would then change, so the graph would be different.
2.
  - a. The graph shows the number of birthdays in each month for Tami's scout group.
  - b. August
  - c. May, July
  - d. 24, by adding all the birthdays
  - e. No. There would be a different number of children in Steve's group with different birthdays.
3. Three questions could include the following:
  - How many birthdays are there in April (or any other month)?
  - How many months have the same number of birthdays?
  - How many more birthdays are there in March (or any other month) than in September (or any other month)?



## Day 10: Lesson 2

1.

Bus	Walk	Car	Bike
6	5	2	3

2. The title can be How My Friends Get to School or something similar.

Bus								
Walk								
Car								
Bike								

3. The questions can include the following:

- What does the graph tell you?
- What is the most popular way to get to school?
- What is the least popular way?
- How many take a bus (walk, car, bike)?
- How many more take a bus (walk, bike) than walk (car, bike)?
- How many children were surveyed?
- Would the graph look the same if Jasper and Elena asked a different group of friends?

After the student prints six questions about the graph in question 3, answer them. Ask the student if you answered correctly.

Remind the student to keep collecting data for Day 11.

Have the student do the assignment for Day 10 after completing the day's lessons.

## Day 11

The student makes graphs from the data collected over the last few days.

The student will be making three graphs from the data he or she collected. Have the student make all three kinds of graphs (picture, bar, and concrete object). When recording the information, have the student record it three ways (chart, list, and picture).

Assist the student in recording and making the graphs. The student may especially need help selecting the type of graph paper that would be most suitable for the data collected. There are two types of graph paper provided. Be sure the graph paper from the Appendix is in the Student Folder. Help the student with any problems or difficulties he or she may have. Answer the student's questions about the data in the graphs.

## Day 12

The student uses data to solve a variety of problems.

### Day 12: Lesson 1

Talk about data and how it is used in everyday life. Data is not just found on graphs. Understanding how to read and interpret data is a vital component of living.

#### Answers

1. a. Selene  
b. The total cost of the items is 125¢. No one else has that much money.  
c. French fries  
d. The other items would bring the total to more than 110¢.  
e. a glass of milk  
f. iced tea, French fries, hamburger
2. Accept any items that total 100¢ or less.

#### Answers

1. a.  $32 + 20 = 52$ , Shelby Street and Park Place  
b.  $27 + 11 = 38$ , Rowland Road and Angle Avenue  
c.  $52 + 38 = 90$ , 90
2. a.  $32 + 27 = 59$ , Jasper delivered 59 flyers on Saturday.  
b.  $20 + 11 = 31$ , Jasper delivered 31 flyers on Sunday.
3.  $27 + 20 = 47$ , He delivered flyers on Rowland Road and Park Place.
4. Answers will vary. Here is an example: Jasper delivered 43 flyers one day. Which streets did he deliver the flyers to?
5. Bluejays and Robins



6. a. yo-yo and whistle

$$\begin{array}{r} 39 \\ + 41 \\ \hline 80 \end{array}$$

- b. hockey card and crayons

$$\begin{array}{r} 27 \\ + 53 \\ \hline 80 \end{array}$$

- c. eraser and note pad

$$\begin{array}{r} 25 \\ + 50 \\ \hline 75 \end{array}$$

- d. sticker and pen

$$\begin{array}{r} 61 \\ + 9 \\ \hline 70 \end{array}$$

**Day 12: Lesson 3**

When the student is making up the problems, have him or her see that there are a variety of combinations that can be used to solve one problem, like the problem in question 2.

**Answer**

1. ball and picture
2. pen, vase, and car; or pen, picture, and ball

**Day 13**

This is an introduction to describing the likelihood of an outcome. The student becomes familiar with the terms *certain*, *impossible*, *likely*, or *unlikely*.

**Day 13: Lesson 1**

Discuss the terms *certain* and *impossible* with the student. Brainstorm things that are certain and things that are impossible.

If the student does not have coloured blocks, draw four 4cm × 4cm squares on a separate piece of paper. Have the student colour two squares red and two squares blue and cut them out.

**Answers**

- |               |               |            |
|---------------|---------------|------------|
| 1. impossible | 3. impossible | 5. certain |
| 2. certain    | 4. impossible |            |

**Day 13: Lesson 2**

Discuss the terms *likely* and *unlikely* with the student. Talk about things that are likely to happen and things that are unlikely to happen.

There are extension activities for Day 13.

Have the student do the assignment for Day 13 after completing the day's lessons.

**Day 14**

This day continues with describing the likelihood of an outcome. The student becomes familiar with the terms *probably* and *expect*. Although these terms are similar to the ones learned in Day 13, it is important that these be introduced and discussed to become part of the student's expanding vocabulary. The student will learn that more than one word can be used to explain or describe a similar occurrence.

**Day 14: Lesson 1**

Brainstorm things with the student that will probably happen, such as it will be sunny (snowy, cloudy, rainy) tomorrow, there will be a math class next week, and so on. Discuss the similarity between probably and likely.

**Day 14: Lesson 2**

Discuss things the student can expect will happen. These may be similar to the ones the student was certain would happen in Lesson 13, such as birds will fly south in the winter, the sun will rise in the morning, there will be school in September, and so on. Discuss the similarity between expect and certain.

**Day 14: Lesson 3**

Discuss why things that are likely, unlikely, or probably to happen may change. Schedules change for several reasons; the weather is often unpredictable. Talk about the student's own experiences with changes and how this knowledge can help us predict events that can change.

**Answers**

Sentences 1, 2, 4, 8, and 9 are expected to happen.

Sentences 3 and 5 will probably happen.

Sentences 6, 7, and 10 will depend on individual students and situations.



There are extension activities for Days 14 and 15.

Have the student do the assignment for Day 14 after completing the day's lesson.

## Day 15

The student makes predictions based on simple probability experiments.

### Day 15: Lesson 1

Have the student predict the likelihood of a coin landing on its faces, edge, or floating in the air when flipped. Have the student flip a coin 20 times, record the outcome, and answer the questions. The student then repeats the procedure with a paper cup.

### Day 15: Lesson 2

The student makes predictions about the probability of numbers occurring when a die is rolled 20 times. Review the student's answers to the predictions after he or she rolls the die and counts the number of rolls for each number. Review the terms *likely*, *unlikely*, *probably*, *certain*, *impossible*, and *expect*, especially if the student is having difficulty with the concept.

#### Answers

1. yes
2. yes
3. impossible
4. no (Although chances are excellent that a one will be rolled, it is not certain.)
5. unlikely
6. yes
7. likely
8. yes

### Day 15: Lesson 3

The student makes predictions about the probability of vowels appearing when mixed in with the rest of the alphabet. Ensure the letters of the alphabet are cut out of the Appendix and ready for use before starting the lesson.



## Answers

1. a, e, i, o, u
2. 5
3.  $26 - 5 = 21$ , 21
4. a. unlikely                      d. no                      g. likely                      j. no  
     b. yes                          e. yes                      h. yes  
     c. no                          f. no                      i. no

## Day 16

The student makes predictions based on probability experiments with spinners.

### Day 16: Lesson 1

The student will spin an equally sectioned-off spinner and make predictions about where the spinner will stop.

## Answers

1. no
2. unlikely
3. yes
4. no
5. It will probably stop on each colour the same number of times.

### Day 16: Lesson 2

The student will spin an unequally sectioned-off spinner and make predictions about where the spinner will stop. Ask the student if his or her predictions will be different with this spinner. The spinner is less likely to stop on the colours equally because one colour covers much more area than the other.

Assist the student with making a spinner.

## Answers

1. unlikely
2. unlikely
3. No. It probably will, but it is not certain.
4. yes

There are extension activities for Days 16 to 18.

Have the student do the assignment for Day 16 after completing the day's lesson.

## **Day 17**

The student continues predicting probability with spinners and with a tossing game.

### **Day 17: Lesson 1**

The student predicts the likelihood of outcomes with a number spinner. Have the student explain the data in the graph to you.

#### **Answers**

1. yes
2. no
3. yes

### **Day 17: Lesson 2**

The student predicts the likelihood of outcomes with a different number spinner, records the spins, and makes a graph from the data. Have the student explain the graph to you.

#### **Answers**

1. a. It is divided differently.  
b. The spinner is likely to stop on the 3. The 3 covers more area on the spinner.
2. a. unlikely                      b. yes                      c. No. It is likely, but not certain.

### **Day 17: Lesson 3**

Have the student colour four egg cups in the carton blue, two red, and six green in a random order. If the egg carton is the type that can't be coloured, have the student print the colour words in each cup.

#### **Answers**

1. green
2. no
3. likely



## Day 18

This is a review of the module.

## Answers

1. Three ways of collecting data are counting, measuring, and surveying.
2. Three ways of recording data are by writing in a chart or list or by drawing a picture.
3. Three ways of presenting data include a picture graph, a bar graph, or an object graph.
4.
  - a. It tells about Shivaun's friends' favourite ice cream flavours.
  - b. butterscotch
  - c. cherry
  - d. 7
  - e. 6
  - f. 27 You add all the cones together.
5. Some sample questions include the following:
  - What did most people have for lunch?
  - How many had juice (a sandwich, carrot sticks, chocolate milk, soup, a granola bar)?
  - How many more people had juice than chocolate milk?
  - What did people have the least of?
6. The title could be Vehicles That Drove by Jamal's House or something similar.

Cars																			
Pick-up trucks																			
Vans																			
Transport trucks																			

- a. It tells about the number of vehicles that drove by Jamal's house in one afternoon.
- b. cars
- c. 4

7. Some sample questions include the following:

- Which vehicle passed by Jamal's house the least?
- How many vans passed the house?
- How many vehicles passed in all?

8. a. purple It covers the largest area.

b. yes

c. The probable answer is that the spinner stops most often on purple.

d. The spinner will continue to stop on purple more often than grey or white.

When the student finishes the activities on Day 18, direct him or her to the Student Survey and Student Checklist in Assignment Booklet 8B. The student may work on these alone, or with your help. Go over the responses and discuss them with the student. Give additional instruction as needed to any of the concepts the student has indicated he or she needs help with.

Ensure that you complete the Home Instructor's Evaluation Checklist and the Home Instructor's Feedback forms for Days 10–18. In the Home Instructor's Feedback, give any information you think may be helpful for the teacher to know.

**Submit Assignment Booklet 8B for marking.**



## ASSIGNMENT BOOKLET 8B

Grade Two Mathematics  
Module 8: Days 10–18

### Home Instructor's Comments and Questions

\_\_\_\_\_  
Home Instructor's Signature

### FOR HOME INSTRUCTOR USE

(if label is missing or incorrect)

Student File Number:  
\_\_\_\_\_

### Grading Scale

- A – Very Satisfactory
- B – Satisfactory
- C – Needs Attention
- D – Unsatisfactory

Apply Module Label Here

Name

Address

Postal Code

*Please verify that preprinted label is for  
correct course and module.*

### FOR SCHOOL USE ONLY

Assigned Teacher:  
\_\_\_\_\_

### Grading

Mathematics:  
\_\_\_\_\_

Neatness:  
\_\_\_\_\_

Date Assignment Booklet  
Received:  
\_\_\_\_\_

### Teacher's Comments

\_\_\_\_\_  
Teacher's Signature

Home Instructor: Keep this sheet when it is returned to you as a record of the student's progress.

# INSTRUCTIONS FOR SENDING IN THIS DISTANCE LEARNING ASSIGNMENT BOOKLET

When you register for distance learning courses, you are expected to send in Assignment Booklets for corrections regularly. Try to send each Assignment Booklet as soon as you have completed it. Before sending your Assignment Booklet, please check the following:

- Are all the assignments completed? If not, explain why.
- Has your work been reread to be sure the spelling and details are correct?
- Is the record form filled out and the correct module label attached?

## MAILING

### 1. Postage Regulations

Do **not** enclose letters with Assignment Booklets.

**Send all letters in a separate envelope.**

### 2. Postage Rates

**Take your Assignment Booklet to the post office and have it weighed. Attach enough postage** and seal the envelope. Assignment Booklets will travel faster if correct postage is used and if they are in large envelopes that are no more than two centimetres thick.

## FAXING

1. Assignment Booklets may be faxed. Contact your teacher for the fax number.
2. All faxing costs are the responsibility of the sender.

## E-MAILING

Assignment Booklets may be e-mailed. Contact your teacher for the e-mail address.



**Module 8**

# **What Does the Data Show?**

Assignment Booklet 8B



Learning  
Technologies  
Branch

**Alberta**  
LEARNING



Grade Two Mathematics  
Module 8: What Does the Data Show?  
Assignment Booklet 8B  
Learning Technologies Branch

This document is intended for	
Students	✓
Teachers	✓
Administrators	
Home Instructors	✓
General Public	
Other	



You may find the following Internet sites useful:

- Alberta Learning, <http://www.learning.gov.ab.ca>
- Learning Technologies Branch, <http://www.learning.gov.ab.ca/lrb>
- Learning Resources Centre, <http://www.lrc.learning.gov.ab.ca>

The use of the Internet is optional. Exploring the electronic information superhighway can be educational and entertaining. However, be aware that these computer networks are not censored. Students may unintentionally or purposely find articles on the Internet that may be offensive or inappropriate. As well, the sources of information are not always cited and the content may not be accurate. Therefore, students may wish to confirm facts with a second source.

### ALL RIGHTS RESERVED

Copyright © 2001, the Crown in Right of Alberta, as represented by the Minister of Learning, Alberta Learning, 11160 Jasper Avenue, Edmonton, Alberta T5K 0L2. All rights reserved. Additional copies may be obtained from the Learning Resources Centre.

No part of this courseware may be reproduced in any form, including photocopying (unless otherwise indicated), without the written permission of Alberta Learning.

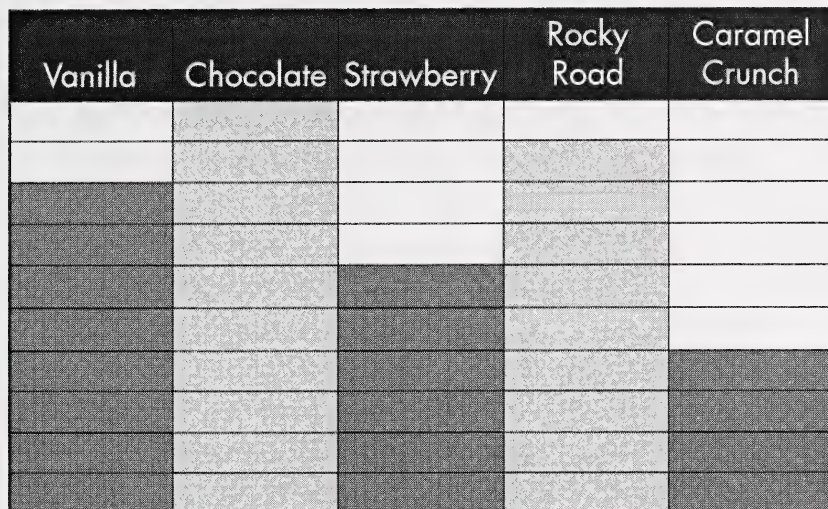
Every effort has been made both to provide proper acknowledgement of the original source and to comply with copyright law. If cases are identified where this effort has been unsuccessful, please notify Alberta Learning so that appropriate corrective action can be taken.

**IT IS STRICTLY PROHIBITED TO COPY ANY PART OF THESE MATERIALS UNDER THE TERMS OF A LICENCE FROM A COLLECTIVE OR A LICENSING BODY.**



Study the graph.

## Our Favourite Ice Cream Flavours



Think of six questions to ask about the graph. Print them on the lines.

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_



# Assignment Booklet 8B

- \_\_\_\_\_  
\_\_\_\_\_
- \_\_\_\_\_  
\_\_\_\_\_



Sort these sentences into the correct boxes. Print the number beside each sentence in one of the boxes.

What are the chances that the following will happen?

1. You will have a birthday in the next year.
2. You will read today.
3. You will travel to Disneyland this year.
4. A glass will float in the air when you drop it.
5. Someone you see in the next week will have brown eyes.
6. You will have an apple in the next few days.
7. Fall will come after summer.
8. The sun will shine all year.
9. Most people you know have brown hair.
10. Bears will hibernate next winter.

Likely

Unlikely

Certain

Impossible

--

--

--

--



1. Draw a picture in the box of something that will probably happen. Under the box, print a sentence telling what it is.



---

---

---





2. Draw a picture in the box of something that you expect will happen. Under the box, print a sentence telling what it is.

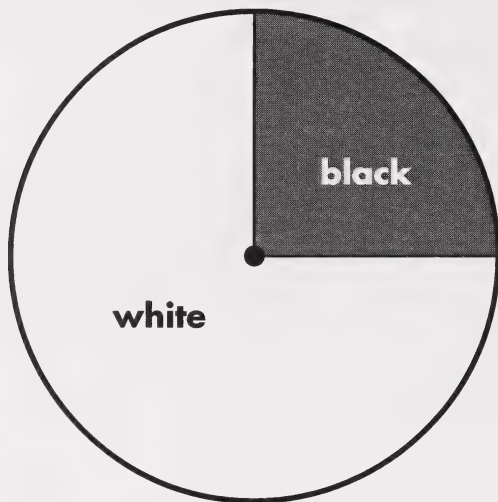
---

---

---



Look at the spinner. Print your answers to the questions on the lines.



1. Is the spinner more likely to stop on white or black? \_\_\_\_\_

Why? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. Use a pencil and a paper clip on the spinner. Spin the paper clip 20 times. Keep a record of the spins in the chart.

White	
Black	



What does your experiment show? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. If you record another 20 spins, what do you think will likely happen?

\_\_\_\_\_

\_\_\_\_\_

4. Why? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



## Student Survey

### Days 10 to 18

Think about what you have learned in Days 10 to 18. Then answer these questions.

What did you like best about Days 10 to 18?

---

---

---

---

---

---

List **three** things you learned in Days 10 to 18.

---

---

---

---

---

---

## Assignment Booklet 8B

Is there something you would like to know more about?

---

---

---

---

---

---

---

Is there something you still need help with?

---

---

---

---

---

---

---



**Student Checklist****Days 10 to 18**

<b>I know how to . . .</b>	<b>Put a check mark beside the things you can do.</b>
1. organize data with charts, lists, and pictures	
2. make and label picture, bar, and object graphs	
3. think of questions to ask about a graph	
4. tell whether an event is likely, unlikely, probable, or expected to happen	
5. predict if something is going to happen during an experiment	



## Home Instructor's Evaluation Checklist

Days 10 to 18

Specific Outcomes/ Concepts Learned  The student . . .	Has the student mastered the concept (yes or no)?
1. formulates the questions and categories for data collection, and actively collects first-hand information	
2. chooses an appropriate recording method, such as tally marks, to collect data	
3. organizes data, using such graphic organizers as diagrams, charts, and lists	
4. constructs and labels concrete object graphs, pictographs, and bar graphs	
5. generates new questions from displayed data	
6. describes the likelihood of an outcome, using such terms as <i>likely</i> , <i>unlikely</i> , <i>expected</i> , or <i>probable</i>	
7. makes a prediction based on a simple probability experiment	



This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no text or other markings on the paper.